

Claims

- [c1] 1. A liner insertable into the central bore of a downhole tool, the central bore being characterized by a standard diameter along the central portion of the tool, and a narrowed diameter proximate the ends of the tool, the liner comprising:
a resilient material rolled into a substantially cylindrical shape and having an outside diameter, wherein:
the outside diameter of the resilient material is variable to allow the resilient material to move through the narrowed diameter of the downhole tool; and
the outside diameter of the resilient material, once past the narrowed diameter, is expandable within the standard diameter of the downhole tool.
- [c2] 2. The liner of claim 1, wherein the outside diameter of the resilient material expands to contact the inside surface of the central bore.
- [c3] 3. The liner of claim 1, further comprising a transmission line routed between the central bore and the outside diameter of the resilient material.
- [c4] 4. The liner of claim 3, wherein the resilient material

keeps the transmission line in contact with the inside surface of the central bore.

[c5] 5. The liner of claim 3, wherein the resilient material is effective to protect the transmission line from materials traveling through the central bore.

[c6] 6. The liner of claim 3, wherein a channel is formed in the resilient material to accommodate the transmission line.

[c7] 7. The liner of claim 6, wherein the resilient material comprises two mating surfaces that mate to form the cylindrical shape.

[c8] 8. The liner of claim 7, wherein movement between the mating surfaces is effective to cause a change in diameter of the resilient material.

[c9] 9. The liner of claim 7, wherein the mating surfaces are sealed together to prevent substances from leaking out of the liner.

[c10] 10. The liner of claim 1, wherein the resilient material, once expanded, is maintained in place by shoulders within the downhole tool.

[c11] 11. A method for lining the central bore of a downhole tool, the central bore having a central portion of a stan-

dard diameter, and tool ends of a narrower diameter, the method comprising:

rolling a resilient material into a substantially cylindrical shape;

inserting the resilient material into the central bore through at least one tool end into the central portion of the downhole tool; and

expanding, by the resilient material, the outside diameter of the resilient material within the central portion of the central bore.

[c12] 12. The method of claim 11, further comprising expanding, by the resilient material, the outside diameter of the resilient material to contact the inside surface of the central bore.

[c13] 13. The method of claim 11, further comprising routing a transmission line between the central bore and the outside diameter of the resilient material.

[c14] 14. The method of claim 13, further comprising maintaining, by the resilient material, contact between the transmission line and the inside surface of the central bore.

[c15] 15. The method of claim 13, further comprising protecting, by the resilient material, the transmission line from

materials traveling through the central bore.

- [c16] 16. The method of claim 13, further comprising forming a channel in the resilient material to accommodate the transmission line.
- [c17] 17. The method of claim 11, wherein the resilient material comprises two mating surfaces that mate to form the cylindrical shape.
- [c18] 18. The method of claim 17, further comprising moving the mating surfaces with respect to one another to change the diameter of the resilient material.
- [c19] 19. The method of claim 17, further comprising sealing the mating surfaces to one another to prevent substances from leaking out of the liner.
- [c20] 20. A method for lining the central bore of a downhole tool, the method comprising:
providing a resilient liner formed into a substantially cylindrical shape, the resilient liner having an outside diameter sized to fit within the central bore;
inserting the resilient liner into the central bore; and
expanding, by the resilient material, the outside diameter of the resilient material within the central bore.